

Abstract

The inventive aqueous pickling agent on the basis of sulfuric acid or phosphoric acid and hydrogen fluoride for stainless steels, which pickling agent is free of wetting and emulsifying agents, contains (each as 100 wt-% substance)

1.5 to 16 wt-% sulfuric acid or

2.0 to 30 wt-% phosphoric acid

as well as

0.5 to 14 wt-% hydrogen fluoride and

0.5 to 15.5 wt-% acid-soluble aromatic
nitro compound.

An iron(III) compound is not supplied to said pickling agent. Merely in the starting phase, an oxidizing agent can be supplied, which oxidizes iron(II) to form iron(III).

As acid-soluble aromatic nitro compound m-nitrobenzene sulfonate and/or 3-nitrophthalate are particularly advantageous.

The inventive pickling agent can be used as bath pickle and - when adding 2.5 to 5.5 wt-% magnesium and/or magnesium compound (calculated as Mg) - also as spraying pickle or brush pickle.